

Appl. No. : 10/501,691
Filed : July 16, 2004

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for immobilizing a biomolecule on a carrier, comprising the steps of spotting a solution consisting essentially of the biomolecule on the carrier, and irradiating the carrier spotted with the solution of the biomolecule with an ultraviolet ray containing a component having a wavelength of 280 nm, wherein the carrier is made of a thermoplastic resin selected from the group consisting of ionomers, polynorbornenes, polyacetals, polyallylates, polyether ether ketones, polyethylene oxides, polyoxymethylenes, polyethylene terephthalates, polycarbonates, polystyrenes, polysulfones, polyparamethylstyrenes, polyallylamines, polyphenylene ethers, polyphenylene sulfides, polybutadienes, polybutylene terephthalates, polypropylenes, polymethylpentenes, polyether sulfones, polyphenylene sulfides, polyoxybenzoyls, polyoxyethylenes, cellulose acetates, polydimethylsiloxanes, polyisobutylenes, cellulose triacetates, poly-p-phenylene terephthalamides, polyisoprenes, polyacrylonitriles, polymethylpentenes, chlorinated plastics, fluorinated plastics, polyamideimides, polyimides, polyethylene plastics, polyvinyl plastics, liquid crystal polymers, acrylate plastics, and thermoplastic elastomers;

a thermosetting resin selected from the group consisting of epoxy resins, polyxylenes, polyguanamines, polydiallyl phthalates, polyvinyl esters, polyphenols, unsaturated polyesters, polyfurans, polyimides, polyurethanes, poly maleates, melamine resins, urea resins, alkyd resins, benzoguanamine resins, polycyanates, and polyisocyanates;

a copolymer selected from the group consisting of isobutylene/maleic anhydride copolymers, acrylonitrile/acrylate/styrene copolymers, acrylonitrile/EPDM/styrene copolymers, acrylonitrile/styrene copolymers, acrylonitrile/butadiene/styrene copolymers, butadiene/styrene/methyl methacrylate copolymers, ethylene/vinyl chloride copolymers, ethylene/vinyl acetate copolymers, ethylene/ethyl acrylate copolymers, acrylonitrile/butadiene/styrene copolymers, polyether ether ketone copolymers, fluorinated ethylene/polypropylene copolymers, tetrafluoroethylene/perfluoroalkyl vinyl ether copolymers, and tetrafluoroethylene/ethylene copolymers; or

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a natural resin, and

wherein the carrier is not coated prior to spotting with the solution of the biomolecule.

2. (Cancelled)

3. (Previously presented) The method according to claim 1, wherein the carrier is made of a synthetic resin selected from the group consisting of polycarbonate, polymethyl methacrylate, acrylonitrile/butadiene/styrene copolymer, polyethylene, polyethylene terephthalate, polyphenol, polystyrene, polyacrylonitrile, polyvinyl chloride and aramide.

4. (Previously presented) The method according to claim 1, wherein the irradiation dose of the ultraviolet ray is 100 mJ/cm^2 or more.

5. (Previously presented) The method according to claim 1, wherein the biomolecule is selected from the group consisting of a nucleic acid, protein, saccharide, antigen, antibody, peptide and enzyme.

6. (Currently amended) A method for producing a biomolecule-immobilized carrier in which a biomolecule is immobilized on a carrier, comprising the steps of spotting a solution consisting essentially of the biomolecule on the carrier, and irradiating the carrier spotted with the solution of the biomolecule with an ultraviolet ray containing a component having a wavelength of 280 nm to immobilize the biomolecule on the carrier, wherein the carrier is a thermoplastic resin selected from the group consisting of ionomers, polynorbornenes, polyacetals, polyallylates, polyether ether ketones, polyethylene oxides, polyoxymethylenes, polyethylene terephthalates, polycarbonates, polystyrenes, polysulfones, polyparamethylstyrenes, polyallylamines, polyphenylene ethers, polyphenylene sulfides, polybutadienes, polybutylene terephthalates, polypropylenes, polymethylpentenes, polyether sulfones, polyphenylene sulfides, polyoxybenzoyls, polyoxyethylenes, cellulose acetates, polydimethylsiloxanes, polyisobutylenes, cellulose triacetates, poly-p-phenylene terephthalamides, polyisoprenes, polyacrylonitriles, polymethylpentenes, chlorinated plastics, fluorinated plastics, polyamideimides, polyimides,

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polyethylene plastics, polyvinyl plastics, liquid crystal polymers, acrylate plastics, and thermoplastic elastomers;

a thermosetting resin selected from the group consisting of epoxy resins, polyxylenes, polyguanamines, polydiallyl phthalates, polyvinyl esters, polyphenols, unsaturated polyesters, polyfurans, polyimides, polyurethanes, poly maleates, melamine resins, urea resins, alkyd resins, benzoguanamine resins, polycyanates, and polyisocyanates;

a copolymer selected from the group consisting of isobutylene/maleic anhydride copolymers, acrylonitrile/acrylate/styrene copolymers, acrylonitrile/EPDM/styrene copolymers, acrylonitrile/styrene copolymers, acrylonitrile/butadiene/styrene copolymers, butadiene/styrene/methyl methacrylate copolymers, ethylene/vinyl chloride copolymers, ethylene/vinyl acetate copolymers, ethylene/ethyl acrylate copolymers, acrylonitrile/butadiene/styrene copolymers, polyether ether ketone copolymers, fluorinated ethylene/polypropylene copolymers, tetrafluoroethylene/perfluoroalkyl vinyl ether copolymers, and tetrafluoroethylene/ethylene copolymers; or

a natural resin, and

wherein the carrier is not coated prior to spotting with the solution of the biomolecule.

7. (Original) The method according to claim 6, wherein the biomolecule is a nucleic acid, and the nucleic acid-immobilized carrier is used for analysis of the nucleic acid by hybridization.